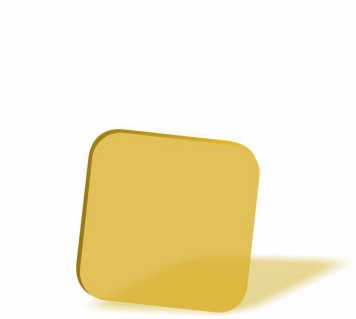
laservision

laser safety window P1P21 (3mm)

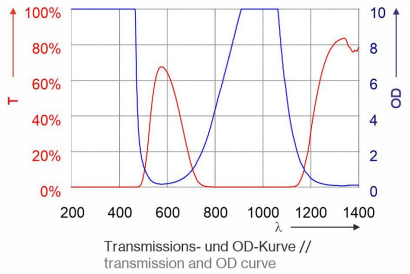


Articlenumber: 000P1P212001
GTIN: 4050369053724
Unit: 1 Stück
Weight incl. packaging 0,07 kg
Weight excl. packaging: 0,07 kg

Highlights

The plastic laservision laser safety window 000.P1P21.2001 made of polycarbonate (with a thickness of approx. 3-3.2mm) is a gold-colored laser protection window with a scratch-resistant coating. It is certified acc. three standards: EN 207; EN12245 and EN 60825-4). Due to the high ODs in the UV and blue range (OD10+ from 180 to 458 nm; OD8+ >458-462nm), the broad and high protection level within the NIR (OD5+ from 815nm to 1100nm; OD8+ from 880nm to 1075nm, and OD10+ from 940 to1055nm) and in the infrared area (OD8 + from 5230 to 14570 nm), the window is suitable for high power diodes as well as for disk, Nd: YAG, fiber or with CO_2 lasers. The gold-colored laser safety window is 200x100mm in size and has good color vision and VLT of appr. 50%. The maximum size can be 2000 x 1150mm. The thickness is about 3mm.

Filtercurve



Transmissions- und OD-Kurve //
transmission and OD curve

COATING:	Anti-scratch on both sides
COLOUR:	gold
FILTER MATERIAL:	Plastic
FILTER TECHNOLOGY:	Absorption filter
FILTER THICKNESS:	3,1mm
PROTECTION CLASS / NORM:	EN 60825-4, EN 207 full protection, EN 12254
PROTECTION RANGE:	near infrared, Infrared, visible, ultraviolett
VLT (APPROX.):	50%
VISUAL BRIGHTNESS:	Very good
COLOUR RECOGNITION:	Good

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WAVELENGTH	OD	OPERATING MODE / TESTED PROTECTION LEVEL
180 - 315	(OD10+)	D LB10 + IR LB4 + M LB6Y
>315 - 460	(OD10+)	D LB6 + IR LB8 + M LB8Y
>460 - 464	(OD8+)	D LB6 + IR LB8 + M LB8Y
>464 - 468	–	DIRM AB6
>468 - 470	–	DIRM AB5
>470 - 472	(OD4+)	DIRM LB4
>472 - 475	–	DIRM AB3
>475 - 480	–	DIRM AB2
>480 - 490	–	DIRM AB1
720 - <755	(OD1+)	DIRM LB1
755 - <780	(OD2+)	DIRM LB2
780 - <800	(OD3+)	DIRM LB3
800 - <815	–	DIRM AB4
815 - <835	(OD5+)	DIRM LB5
835 - <860	–	DIRM AB6
860 - <880	–	DIRM AB7
880 - <905	(OD8+)	D LB6 + IR LB8 + M LB8Y
905 - <940	–	DR AB7 + I AB8 + M AB8Y
940 - 1050	–	DR AB7 + I AB8 + M AB8Y
>1050 - 1065	–	D AB6 + I AB8 + R AB7 + M AB8Y
>1055 - 1065	(OD9+)	D LB6 + IR LB8 + M LB8Y
>1065 - 1075	(OD8+)	D LB6 + IR LB8 + M LB8Y
>1075 - 1081	(OD7+)	D LB6 + IRM LB7
>1081 - 1090	–	DIRM AB6
>1090 - 1100	–	DIRM AB5
>1100 - 1110	(OD4+)	DIRM LB4
>1110 - 1120	(OD3+)	DIRM LB3
>1120 - 1135	(OD2+)	DIRM LB2
>1135 - 1160	–	DIRM AB1
2255 - <2438	(OD1+)	DIRM LB1
2438 - 2467	(OD2+)	DIRM LB2
>2467 - 2590	–	DIRM AB1

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2780 - <2805	–	DIRM AB1
2805 - 2870	(OD2+)	DIRM LB2
>2870 - <3053	–	DIRM AB1
3053 - <3116	(OD2+)	DIRM LB2
3116 - <3177	(OD3+)	DIM LB3 + R LB3Y
3177 - <3200	–	DI AB3 + R AB3Y + M AB4
3200 - 3510	–	DI AB3 + R AB3Y + M AB5Y
>3510 - 3525	(OD4+)	DIM LB4 + R LB3Y
>3525 - 3618	(OD3+)	DIM LB3 + R LB3Y
>3618 - 3700	(OD2+)	DIRM LB2
>3700 - <3933	–	DIRM AB1
3933 - <4010	(OD2+)	DIRM LB2
4010 - <4040	–	DIM AB3 + R AB3Y
4040 - 4195	–	DI AB3 + R AB3Y + M AB4
>4195 - <4390	–	DIRM AB2
4390 - <4425	–	DI AB3 + R AB3Y + M AB4
4425 - 4565	(OD6+)	DI LB4 + R LB3Y + M LB6Y
>4565 - 4590	(OD4+)	DIM LB4 + R LB3Y
>4590 - <4780	–	DIRM AB2
4780 - 5050	–	DI AB3 + R AB3Y + M AB5Y
>5050 - 5230	–	DI AB3 + R AB3Y + M AB4
>5230 - 14570	(OD8+)	DI LB4 + R LB3Y + M LB6Y
>14570 - 16460	(OD4+)	DIM LB4 + R LB3Y
>16460 - 21500	(OD6+)	DI LB4 + R LB3Y + M LB6Y
>21500 - <23200	–	DI AB3 + R AB3Y + M AB4
23200 - 25000	(OD6+)	DI LB4 + R LB3Y + M LB6Y

DIN EN 60825-4

200 - 470nm | 40,7 kW/m^2 | T2 | t_{max} = 105s
815-1100nm | 40,7 kW/m^2 | T2 | t_{max} = 105s
5230-14250nm | 50,9 kW/m^2 | T2 | t_{max} = 105s

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DIN EN 12254

Achtung: Die folgenden Daten werden auf Basis der EN 12254 sowie der ca. Messwerte aus den offiziellen Prüfberichten angegeben. Ergebnisse können bei Wiederholung aufgrund andersartigem Prüflaser/-aufbau/-durchführung abweichen. Es gelten ausschließlich die zertifizierten Schutzstufen.

Wellenlänge	Prüfbedingung / Schutzstufe	Benötigte Leistungs- oder Energiedichte	Strahldurchmesser d_{63}	Pulsdauer t_p	Pulsfrequenz	Gemessene Durchschnittsleistung	Entspricht gemessener Schutzstufe
248 nm	D AB9	$1{,}0x10^{6}$ W/m^2	1,0 mm	40 ns	25 Hz	3,7 W	1,4 x D AB9
248 nm	R AB4	$3{,}0x10^{5}$ J/m²	1,0 mm	40 ns	10 Hz	1,9 W	1,3 x R AB4
266 nm	M AB6Y	$3{,}0x10^{16}$ W/m²	0,5 mm	60 fs	1 kHz	40 mW	2,0 x M AB6Y
1030 nm	D AB7	$1{,}0x10^{7}$ W/m²	1,0 mm	cw	cw	28 W	3,5 x D AB7
1064 nm	I AB8	$5{,}0x10^{5}$ J/m²	1,0 mm	0,4 ms	10 Hz	0,8 W	1,1 x I AB8
1064 nm	R AB7	$5{,}0x10^{4}$ J/m²	1,0 mm	10 ns	10 Hz	0,3 W	4,3 x R AB7
1064 nm	M AB8Y	$1{,}5x10^{4}$ J/m²	0,5 mm	12 ps	50 kHz	3,25 W	1,0 x M AB8Y
1070 nm	D AB6	$2{,}5x10^{7}$ W/m²	1,0 mm	cw	cw	20,4 W	1,0 x D AB6
5000 nm	M AB6Y	$1{,}0x10^{17}$ W/m²	0,8 mm	90 fs	1000 Hz	1,1 W	4,3 x M AB6Y
10600 nm	D AB3	$1{,}0x10^{6}$ W/m²	1,0 mm	cw	cw	0,95 W	1,2 x D AB3
10600 nm	I AB3	$1{,}0x10^{5}$ J/m²	1,0 mm	20 ms	10 Hz	0,215 W	1,5 x I AB3
10600 nm	R AB3Y	$1{,}0x10^{5}$ J/m²	1,0 mm	900 ns	100 Hz	0,810 mW	1,0 x R AB3Y

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OD

Wavelength (NM)	OD
180 - 460	(OD10+)
>460 - 464	(OD8+)
>464 - 466	(OD6+)
780 - <800	(OD3+)
800 - <815	(OD4+)
815 - <835	(OD5+)
835 - <860	(OD6+)
860 - <880	(OD7+)
880 - <905	(OD8+)
905 - <940	(OD9+)
940 - 1055	(OD10+)
>1055 - 1065	(OD9+)
>1065 - 1075	(OD8+)
>1075 - 1081	(OD7+)
>1081 - 1090	(OD6+)
>1090 - 1100	(OD5+)
>1100 - 1110	(OD4+)
4780 - 5050	(OD5+)
5230 - 14570	(OD8+)

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